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DISCIPLINE IN THE SCHOOL-ROOM.

I. DIFFICULTIES IN THE WAY OF ITS SUCCESSFUL MAINTENANCE.

THERE are few teachers who, at some point in their experience in the school-room, have not found themselves taken all aback by some special development, or case, for which their theory made little or no provision. There is not a school anywhere which has not some peculiarities of its own. There is not a teacher possessed of ordinary experience in common school teaching, but has found it vastly easier to govern some schools than others. In one school he meets with elements of discord far more difficult to reduce to system, than in another; though to outward view the school may be made up of much the same material. The pupils may be equally advanced and equally quick or slow to learn, and ranging in nearly the same ages and general classification; and yet there will be something—what that something is it may not be always so easy to detect—something in the one, making a far larger draft upon the teacher's disciplinary exertions, than in another, which it has been his, it may be but a little before, to govern.

Besides, there is a vast difference in the mental make of those assaying to teach. To one it seems a perfectly natural acquirement to secure and maintain a degree of order at which another, perhaps equally well qualified to instruct,

stands almost amazed—wondering how it is that his more fortunate co-laborer finds it so easy to do that which costs him such constant efforts. He labors hard; he means more-over to effect the end he aims at. The expenditure of strength, of thought, and of patience, in the successful one bears perhaps no comparison with that put forth by the less perfect though no less earnest disciplinarian.

Whence this disparity? Where is the defect? Is it all in the school? Or in part there, and in part in the teacher, and possibly in part in what the teacher finds himself little able to remove or remedy? For there are difficulties, and serious ones too, from a source over which the teacher possesses hardly any control; and there are others which prove to be difficulties only because they are not properly apprehended and wisely dealt with.

Our purpose in the present article is to glance at a few of these obstacles in the way of securing perfect order and discipline in the school-room, reserving for a subsequent article the suggestion of some of the means or methods of their successful removal; or, where they may not be removed, how they are to be disposed of so as not to impede but rather to promote the desired ends of discipline.

I. The first impediment which we notice as one found by many teachers to be in the way of carrying out their plans of government in the school-room, is the interference of parental or patronal authority.

This is felt especially by teachers in our common district and graded schools, who are expected to receive all that are sent for instruction, and to govern all; albeit they may be pupils who have never learned even the first principles of subjection at home. They come from families often where has existed no sort of government, except the government of will, and that not unfrequently of an exceedingly capricious and arbitrary stamp. Parents and guardians are not always model disciplinarians in the family and in the control of their wards. Take society as a whole, and the well-governed families are perhaps among the exceptions; whilst the majority are specimens of greater or less mismanagement. Indulgence and want of wholesome restraint, with self-will unsubdued in children at home, are found by

every teacher to be among the foremost of the sources of embarrassment in the maintenance of perfect discipline in the school-room.

At the same time, it not unfrequently happens that the parents in whose households the least parental authority exists, are among the first to enjoin upon the teacher the necessity of making their children "mind."

In fact many of them send their children to school with the express statement to the teacher that they can do nothing with them themselves; and the only hope, as confessed by them, is to have the teacher make something of them—make them, forsooth, what they themselves, from their children's infancy, have been assiduously laboring to disqualify them to become—obedient children. Though we would not for a moment doubt the integrity of their design—they do not mean to make their children unruly and disrespectful of rightful authority—yet certainly they could take no surer course than they do, to secure this end, viz.: by indulging their children, or correcting them only when in a passion, and then a moment after regretting and perhaps retracting the whole they had done.

Let however the teacher begin to correct: let him exercise the very authority which the patrons of his school commit ostensibly in such unlimited measure to him, and the parents described will be the very first in their outcries against the teacher's usurpations and alleged severity. Nay, they become even violent in their opposition, appealing most likely to the trustees, and they in turn, sympathizing with what they misjudge to be pure parental feeling for the welfare of their sons and daughters, perchance censure the teacher; and there he stands before the school, shorn of his respect and authority, his influence paralyzed, his hands hampered, and his prestige as a disciplinarian circumscribed, if not completely destroyed. What is he to do for redress? The trustees may be as unacquainted practically with the teacher's embarrassment and position as the parents. Severity—cruelty is the hue and cry; and of course it will not do for trustees to run counter to public feeling, often prejudiced, always more or less biased in favor of parental sympathies.

Were the teacher, under such circumstances, in a private or select school, or academy, or collegiate institution, the way would be far more open; for the offending pupil or pupils might be dismissed at once, and there the matter, as far as he was concerned, would rest; since none are compelled to patronize, and the private teacher is equally uncompelled to retain patronage, if he finds it infringing on his interests in other respects. This then, viz., parental interference, is often a very serious impediment, even to the best of instructors, to the maintenance of perfect discipline in the district school-room.

II. But there is another, and scarcely less embarrassing obstacle as regarded by some, in the way of discipline, and that is what, for want of a better appellation, we shall term the democratic element, the inborn independence of spirit felt by every genuine specimen of Young America—a disposition to exercise self-government, instead of bowing subserviently to the arbitration of another's will.

The young scion of free-born American Aristocracy—and few there be of native birth who consider themselves unentitled to the rank—breathes in the elements of freedom almost with the first breath he draws; he drinks it in with the aliment of infancy, and grows up claiming and exercising his inalienable prerogatives as a free man. He brings the same self-thinking, self-judging, self-choosing spirit with him into the school-room: and no sooner does the will of the pedagogue begin to assume its sovereignty in its little monarchy, the school-room, than Young America, like old America in days of yore, rebels. He will not submit to be dictated to. Each member of the little constituency is a miniature autocrat, in its legitimate sense, conscious of rights and a will; and conscious moreover of at least some strength, and not a little independence often, in defending those rights and in wielding that will.

We once heard a teacher, after having most ineffectually belabored himself in beating, or endeavoring to beat the principle of absolute obedience into an incorrigible representative of the genuine native-born, lament in most dolorous strains that this was not a monarchy, or an absolute despotism. "There is no such thing," said he, "as teaching

these American children to obey will. You see no such obstinacy in Prussia, or Russia; nor even in France and England. What have such young brats (we use his own expression) to do with thinking for themselves? They ought to be made to mind without a reason, just because I say so; and if I had them at my own control, I would teach them to respect authority—to bow to their superiors." We need hardly add that he was not an American.

But he nevertheless spoke out what many teachers have felt, but would not express. This independence of spirit—this inherent restiveness under restraint—gives a world of trouble to many an inexperienced pedagogue, and not a little to many a judicious, intelligent, and it may be successful disciplinarian. If pupils could only be made to yield an unconditional submission, we should hear far less complaint, we opine, concerning the difficulties of thorough discipline in our district and other schools.

But to this point we shall have occasion to recur, when we come to speak of the remedies of defective government in the school-room. We pass, therefore, to notice a third embarrassing cause, viz. :

III. Innate mischievousness, or an inveterate propensity in some pupils to vex and annoy the teacher.

There is not perhaps a teacher anywhere, be his experience limited even to a single day in the school-room, but has had to encounter this, at times, exceedingly harassing and perplexing source of annoyance. Few are the teachers who have not time and again "groaned in spirit" as they have sat and looked over their school, watching the general movements of things, both upon and beneath the surface, marking the many sly, and some exceedingly shrewd, methods of communication between pupil and pupil, and noting the varied devices in which the mischief-making seemed to possess such a versatility of skill in inventing, and such dexterity in bringing into play; some to divert, and others it may be designedly to attract the teacher's attention to an already consummated trick.

We have sometimes thought that it required a patience even surpassing that which Job is represented to have possessed, to be at once a successful instructor and disciplina-

rian. For that afflicted and vexed patriarch found his three friends "miserable comforters," annoying him in the extreme when they verily thought they were doing right: but these school-room comforters annoy when they verily know they are doing wrong; do it, too, "with malice aforethought," on purpose to torment the teacher. This, however, to their credit be it said, is usually done before they discover that the teacher is consulting their comfort and best interests. They find the opportunity and they improve it. They see that they can vex the master, and they do it unscrupulously, venturing often beyond what they really at first meant to do; for they certainly did not mean to be caught—to be exposed, to be punished.

There is, at times, a shrewdness in planning and perfecting a mischievous plot or act, seen in the miniature statesman or diplomatist, worthy a better object. There is tact, ingenuity, judgment, and often real wit displayed; so much so that even the best disciplinarian is sometimes put to a stand to know exactly how to treat the case. That it needs correction in some form or other is plain; but just how to apply the corrective machinery, he scarcely knows. To inflict the ferule treatment may, for some reasons, seem the most feasible, and possibly the only available method. Perhaps it is so, and it should be dealt out to a discretionary length: nevertheless we hope, in the sequel, to point out "a more excellent way" than even this good, all-time-honored, sovereign remedy; though at the same time, most cordially do we subscribe to Solomon's sentiment that the rod, in certain cases, is indispensable.

But we are now depicting the embarrassments, not the remedies; and however we may feel disposed to treat it, the inherent mischievousness of some of our common-school frequenters must stand confessed to be a source of no slight annoyance, especially in district schools, where teachers are changed so frequently, and where a different system of school-government is adopted, it may be, by each individual instructor. The pupils come to acquire a habit of experimenting, particularly with a new teacher; and in some districts the difficulty not only remains, but grows; each succeeding teacher, unless he be a well-qualified disciplinarian,

leaving a new increment of embarrassment to his successor, glad, as he departs, to get rid of the persistent annoyance.

IV. Intimately connected with the above, though from another source, yet at the same time tending to enhance this very difficulty, is another, viz.: Youth and inexperience in teachers.

Far be it from us to assert that youth alone in the instructor is the exciting cause, or the invariable concomitant of defective discipline. Many young teachers have succeeded far more easily and quickly in reducing confusion to order in the school-room, than others who were many years their seniors. The look and bearing of age are by no means a perfect guarantee of secured and sustained authority in the miniature kingdom where the teacher rules. Nor is it so invariably in any sphere or position in life.

But, at the same time, the mischievously inclined pupils always take advantage of inexperience in the teacher if they can. They try it. They develop its capability, often to the serious disadvantage of the would-be-perfect disciplinarian.

Scholars always think, till they find by experience the contrary, that they can venture farther with a fledgling teacher, little, if any, older than many of their own number, than they would dare to, other things being equal, with one of more commanding appearance and weight of years.

To the credit however of many, perhaps the majority of our district school teachers, be it said that they nobly sustain their standing before their schools, notwithstanding years are not theirs by scores, to give dignity to their presence and force to their authority. But of some this commendation would hardly apply; at all events their inadvertencies and indiscretions (usually the result of inexperience), become a detriment to them, both as respects their present and their future reputation, as successful disciplinarians. For without discipline, order is impossible; and without order, where is the guarantee for rapid advancement in the pupils? Scholars may improve even rapidly under inferiorly qualified instructors; but under defective disciplinarians, little or none; or if they do, it is due to their own, and not to their teachers' assiduity.

Hence where there is so frequent changing of teachers as

there is in some of our districts, and consequently where correspondingly more is demanded of the teacher in the way of discipline—perhaps we look upon it partially, nevertheless it is an honest conviction, drawn not from casual but from a pretty extensive scope of observation—we feel constrained to enter a protest against this too great eagerness on the part of youthful aspirants; and perhaps too much laxness, or possibly oversight, and it may in some cases be partiality, on the part of trustees and county superintendents, in encouraging persons of either sex to assume the responsibilities of public school teaching at too early an age. It is, we are persuaded, one prominent cause of our schools being so inefficiently manned and so loosely kept. Discipline, almost of necessity, is sustained at a disadvantage, and its benefits impaired, not intentionally perhaps, but nevertheless effectively, and the evils of misgovernment entailed upon the school.

But we repeat it, youth in the teacher is not an insuperable obstacle to thorough discipline. It is an embarrassment felt, and in some instances seen in lamentable prominence. But where thorough culture is possessed, it need not be so.

The young, as well as the more advanced and experienced, may rise above all the draw-backs and difficulties surrounding them, and take their stand in the front rank of able disciplinarians. We honor the young man, or young woman, who has energy and force of mind sufficient to meet and triumph over all the impediments to success, which lie so thick along the track of the youthful and inexperienced. To such is justly due the higher respect for successes achieved amid so many, and so formidable obstacles.

V. There is another, and in many respects perhaps still more serious impediment to success in maintaining a due degree of order in the school-room. It is found not in the patrons, nor in the pupils, but in the teacher himself; we refer to the hasty and precipitous manner in which punishment is often administered by unguarded disciplinarians.

There is nothing more completely subversive of respect and authority in the teacher, than to be seen by his school inflicting penalty, with or without just cause, in an excited, passionate manner, or as if prompted in it by either spite or

anger. Children are very quick to discern excitability, if there exist any tendency to it, in the master; and they will give him a world of trouble if they find him open to irritation or bluster. They will do things on purpose to harass, when they would hardly think of doing the same to a more self-collected imperturbable teacher.

It is because of the liability to this very evil that we object, as already intimated, to teachers taking the responsible charge of a school at too young an age, when the very excess of desire to succeed may betray into precipitancy in the exercise of discipline. There is far more danger that inexperience will precipitate the best of plans, than there is that youthfulness will devise wrong ones; for none are so strenuous to carry out what is deemed essential to good order in the school-room, as young teachers; and yet none so easily mistake the medium to be reached. They not unfrequently begin by laying down rules—perhaps stringent and minute—designed to secure the very best results. But their very stringency and minutiae, it may be, overreach the mark, and open the way for trespass; and then comes the point of danger. There is liability just there, that the young teacher mistake self-will for dignity, and passion for prudence. It is natural for one little experienced in teaching to feel that all depends upon maintaining his side, to the yielding of the pupil's, be it right or wrong. The point at issue is conceived to be, not the securance of respect to rule, but to the will of the master.

We grant that there may be cases where the teacher does right, does the only thing practicable, in asserting and enforcing his simple word. But, it must be borne in mind, it will result in good only when the teacher has not only right on his side, but perfect self-possession: when, too, the will of the teacher and the will of the scholar are in open conflict, and not when the teacher's self-will is set above right or reason, both in the pupil and in the master. If there ever arises a case in which will meets will thus in warring attitude, let the teacher, as he values his standing as a disciplinarian, and as he counts of worth his command, or authority in the school-room, beware of precipitation and excited feeling exhibited before the school. Let action, in the criti-

cal case, be the prompting of calm judgment and discretion, never of passion. Let the school be witness of the equanimity with which the teacher holds the reins of authority, and he will pass the crisis triumphant, with his word respected, his character as a firm yet judicious disciplinarian untarnished.

There are times when yielding, on the part of the teacher, is wisdom; nay, when it is absolutely essential to success. The teacher may gain his point, but lose his respect; he may carry out his will, but ruin his influence.

Children always respect the candid, noble-minded instructor, who can see and appreciate their rights, as well as his own; and they will repay him in manifold measure, his liberal recognition of their interest and sentiments of honor, both in yielding him a more cordial and prompt obedience, and in aiding him, by countenance and co-operative acts, in sustaining the discipline which they, as well as he, see to be so essential to rapid improvement.

OLIVER CRANE.

WHAT A MAN KNOWS.—What a man can write out clearly, correctly, and briefly, without book or reference of any kind, that he undoubtedly knows, whatever else he may be ignorant of. For knowledge that falls short of that—knowledge that is vague, hazy, indistinct, uncertain—I for one profess no respect at all. And I believe there never was a time or country where the influences of careful training were in that respect more needed. Men live in haste, write in haste—I was going to say think in haste, only that the word thinking is hardly applicable to that large number who, for the most part, purchase their daily allowance of thought ready made. You find ten times more people now than ever before who can string words together with facility, and with a general idea of their meaning, and are ready with a theory of some kind about most matters. All that is very well as far as it goes, but it is one thing to be able to do this and quite another to know how to use words as they should be used, or really to have thought out the subject which you discuss.—*Lord Stanley.*

THE TEACHING OF SCIENCE.

[PART SECOND.]

IF there be any lesson which is taught us by Science it is this—that to be helped we must help ourselves; and that which is a meaningless accident to some, is the material of a discovery to those from whose eyes previous thought has removed the scales. Whence, not only before but during the lectures too, it is well to recommend some reading, and continual observations and rude experiments on points connected therewith; for one thing done is worth a thousand heard; and there is a great solver of many difficulties and a great guide to truth in something looked at and investigated for ourselves, something experimental, upon which to base our argument. For there is no success in Science—nay, and I would fancy there is no success in anything—which is not based upon such a procedure. And it is a method which the world stands vastly in need of learning just now; for, though we boast of ours as being a very scientific age, the multitude therein are going under cover of the character of a few. But among the greater part of mankind there is a great evil, the evil of speculation unbridled by experiment; for experiment is the great tamer of wild theory. But hypothetical experiments may be bandied about easily, and hypothesis is grandly favorable to a preconception. Hence it is that many fair wits in the world, full of speculation and full of power and full of leisure, are all astray as to their knowledge of things, and tossed on the waves of their own theories, from the lack of that “fountain of the rivers of our arts,” real experiment, the habit of which education is at present too little given to foster, and without which history tells us, and our own experience might show us, no question of Physical Science can be determined. I talk of Physical Science—I would go farther, and speak of moral things. It seems to me that the whole of our true knowledge of all things, material and of the Soul alike, is founded on experiment—various indeed in the two cases, but yet experiment;—that is, knowledge

gained by ourselves, the immediate result of our own labor, free from preconception.

Much theory is founded on the imaginary results of hypothetical experiments; between which kind of theory and that which is founded on experiment actually made with our own hands, and seen with our own eyes, there is a difference so vast as to be comprehended in no argument, but to be learned only by the experience of that magic which there is in our recognition of the magnitude and reality of things as altogether apart from our views of them. For there are two kinds of theorists. There are those who make a great framework which is their theory, and into which they fit the facts; and there are those whose theory is like a map of the things, which are placed thereby more within the grasp of our immediate handling. For things are real and existing, and we wander among them and look; and the true spirit of Science recognizes the greatness of things as compared with our views of them, which views are fleeting, and moulded variously according to our vantage-ground.

What shall we say then of those who, destitute of the spirit of true Science, would compel a whole prospect within the limits of their theory, to whose imagining the double-sided shield can only be the metal it presents? There is but one thing they want, which is Humility; whence it is that there rise about us such mazes of man's conceptions, buildings of sophistries, concealed assumptions, and procrustean beds.

And lest any think that in these remarks I have sprung to too great a generality but too faintly connected with the subject in hand, it is to be remembered that it is from the lack of that which I would call the true spirit of Science that Science is sometimes objected to for the education of women. To deny to women the study of Science is a procedure which begets its own argument; as, if I were to beat a child for future crimes, the future would most likely justify that punishment, which vicious circle of action is bended round a preconception. And our attempt to bend things to our preconceived notion of what they should be is the fundamental of many errors.

The absence of the true Scientific spirit in our day is nowhere more evident than in the popular judgment of this matter of the Education of women. There is scarcely any subject on which there is among men so much dogmatic assertion based on the imaginary results of a hypothetical experiment, and sometimes having not even so much basis as this. It has been affirmed, and not in this age and country alone, that women do not *need* to be taught Science, an immediate and direct utility being all that has been kept in view, and the true end lost sight of.

By some it is maintained that women do not need to learn Science to make them better women or abler to help and bless the world, and also that they are incapable of being scientifically educated. Those who make this double assertion are consistent, so far as their theory goes; for if their theory be true, God has done wisely in so far that He has limited the capacity to the need, as in the case of the lower animals, to whom He has given neither the need nor the capacity for a scientific education. But experiment, so far as it has gone in the education of women, has thrown these unscientific persons into an inconsistency. For they either have to prove in the face of experiment, by some arguments not yet discovered, that their position is a consistent one, or they have to give up their position; the only other alternative being that they should accuse the Creator of women of a great folly. For when they confess (and now facts drive them to this confession) that women are very capable indeed of receiving a true scientific education, and while they at the same time declare that women do not need such scientific education, inasmuch as it will not, they say, make them better women, wives, and mothers, they traduce the wisdom of God, who gave to these women the capacity for Science, and who has adjusted every means to an end, as Science hath itself shown, and every gift to some good result to be wrought out by the use of it. And herein, they being not only theorists on this head, but being the stronger, and therefore practically the awarders to women of such share in the means of knowledge and education as they think fit to grant to them, they are not only impugners of the loving wisdom of God, who adapted women's brains

wisely to the end which He designed for their exercise, but they create a great moral evil, and a sorrow, and a loss, by this shutting up of powers, and by this denial to women of the means of using and improving the good gifts which they have got. Truly those who will not base their theories concerning such weighty things on true experiment are continually driven to accuse God of folly, as palpably as a zoologist would who should shut up an eagle within a narrow cage for its life, and then assert that it never mounted into the air, could not do so, and did not need to do so, albeit he had found by examination that its pinions were so constructed as to lift it forward and upward with a great strength and swiftness.

Now, speaking from experience, I should readily say that there is as great an aptitude for the study of these things in the mind of a woman of average capacity as in the mind of a man of the same. For, of all things, that which is required to pursue the study of Science is that which that study doth itself generate—a certain humility of mind, which I think I have observed, at least in these matters, to be greater among women than among men—whereby they are led to hold their conclusions rather in suspense, which is the desirable state of mind for the pursuit of Science.

But there is one objection which I believe to lie near the heart of many people when it is proposed that Science should be taught to women, or at any rate when it is proposed that it should form an introduction to their education, and any large portion of it: that is, that it is a kind of study which unfits them for the duties which more particularly belong to them; it is, say they, a harsh, masculine sort of study; it is one opposed to woman's grace and woman's simplicity; to that noble character of a true woman, which is so fair a thing in the world. This is an objection to which, if it were valid, I would readily give place, very different from that unkindly one which would deny them the study of it because they do not clamor for it. Yet I do not fear but that Nature will ever vindicate herself, and the glorious character of true womanhood would rise from all the attacks of a false Science; for I have seen it rise hitherto above the lack of true Science. Nor am I so dis-

trustful of the strength of woman's nature as to think it to be in such unstable equilibrium. Nay, but there is in woman's nature that peculiar union of humility and of conviction which all Science is, as I would take it, God-sent into the world to teach, whereby she is led to assimilate those lessons therein to which her own heart is tuned, as in music those strings that are tuned to a certain note do vibrate when that note is sounded.

There are many women who are now saying, after but a short period of instruction in Science, that they look upon these studies as little less than divine. Whereby they mean that they have brought to their minds and hearts a degree of that help and strength, light and health, which they are accustomed to recognize as a direct gift from God, whether He sends them by means of these messages of His which are hidden up and down everywhere in the natural world, or in answer to the prayer of the humble soul without these things. They say that these studies supply them with a constant store of great thoughts; and in this they are a true blessing to them; for inasmuch as the thoughts which usually press most on the minds of women are of too personal and subjective a kind, and are connected with the troubled and unrestful life of man on earth, and with the small details and anxious cares of daily living, the thoughts engendered by the study of the Mathematics and Physical Science, in most of its branches at least, are above all these, in a calm region wherein we find inexhaustible matter for wonder, and joy, and worship, and praise. And we do the duties of earth better when our minds dwell among the harmonies of God, and not always among the discords of human society. Women have often said that they were able to return with a calm mind to the right performance of domestic work after going out to gaze for awhile upon the great multitude of stars on a cloudless night; and they now say that the calmness and strength so attained is far more permanent and real when to the mere sentiment of beauty, which however may be a powerful aid, is added some knowledge of the wondrous working, in the laws which regulate the universe, of the Supreme will and control of Him who made them all.

THE VALUE OF EDUCATION.

THERE are few things about which people are so much agreed as on the value of education. Though they are not prepared very often to explain what they mean by education, and not very apt in determining what its value is, they assent to the general statement that it is of the highest value, without hesitation, and on all occasions. It is not difficult to explain why the precise appreciation of its value is rare, and why the precise signification of the word "education" is seldom arrived at. To make out, however, what each of these terms imports, is of prime necessity.

Education differs from information or knowledge. The latter is of a special character, the purport of which is to fit a man for bringing about certain definite results by the immediate operation of that knowledge which he possesses. We talk, indeed, of the education of a lawyer, a doctor, and a clergyman—of an engineer, a soldier, or a sailor; generally meaning by it the information or knowledge which he has acquired for the immediate exercise of his vocation. But law, medicine, divinity, mechanics, strategics and navigation are not education. A man may possess any one of them and be well nigh illiterate, though of course some can more possibly co-exist with want of education than others. One can conceive that a man may have a profound practical acquaintance with law, and be an uneducated person. Again, to quote an instance, the first Duke of Marlborough was one of the most skillful generals ever known, but he could not spell, and hardly write. Some men who have had the most marvellous aptitude and quickness in mechanical science, have been unable from sheer ignorance to sustain a common conversation.

Education, on the other hand, deals with formalities. It does not aim so much at setting the mind right on particular points, as on getting the mind into the way of being right. It does not deal with matter, but with method. It purposes to train the thinking powers of man, not to fill the mind with facts. Hence, were it perfect, it would cultivate

the intelligence so largely as to render easy the acquisition of any knowledge. It deals in short, either directly or indirectly, with logical order and the reasoning powers. That it falls short of effecting what it purposes, is due to defects in its system, to defects in man's mind, to defects in this or that man's mind. As, however, its operation is not immediate, but only indirect, its best methods are frequently cavilled at as useless.

It may teach the logical method of thinking and reasoning. This, however, is generally too abstract for most minds, except they be more or less matured, and more or less informed on one or two subjects. In place of this, then, it teaches ordinarily something, which is as exact an illustration of logical method as can be, and which, being unfailing in its inferences, trains the mind in method, and often stores it with facts. In a greater or less degree, but in some degree at least, this inculcation of an abstract method is necessary for any kind of education, and even, except it be a mere knack, for information.

Reading and writing even are educational methods. The letters of the alphabet are abstract and arbitrary signs, the comprehension of which requires a certain amount of attention, and a separation, for a time at least, between the thing signified and the sign. After a time the use and formation of letters become almost mechanical arts, though this is, to be sure, the case with all perfect methods; for what we call a mechanical process in the mind, means a habit, the exercise of which is so rapid, that we are unable to follow it, and so sure about it as not to need to follow it. Arithmetic, the science of abstract numbers, is an educational method of great and well nigh universal necessity, though it is also of great practical utility in its application to details and facts. By far the majority of people who learn arithmetic fully, never need use more than its simplest rules. So, in a still more marked way, it is with geometry, and certain other familiar educational processes. To illustrate these methods, however, we need the presence of a certain number of facts, and to arrange and classify these facts we need more or less of these methods.

Now, it is plain that some of these methods have so obvi-

ous and universal a practical application that they must be possessed by everybody who wishes to carry on, except in the lowest station, the commonest business of life. Hence they are looked on as pieces of knowledge or information as they have a direct result. Thus it is that the confusion commences between education and information. It is not difficult to put knowledge and method in strong contrast, but it is not easy to say where method ends and knowledge begins.

The value of education is measured by three rules. What is it worth to the individual possessing it? What is the worth which society assigns to it? What is its material worth, or, in other words, what advantages are connected with it, which may be reduced with greater or less exactness to dollars and cents? The first of these aspects of the value of education is apt to be measured by the other two; but unless a man is to merely live by other people's good opinion, or to merely follow that which will increase his balance at his banker's, the first has a fair claim to independent consideration.

All judgments which have been worked out by a man's own mind, all general principles which have influenced society, all directions of original thought, have come from the first of these values of education. In the worth of education to the individual who has it, lie all the facts of human progress, and all hope of human progress. And in it, too, are all the consolations of the man himself, whether they be escape from prevalent error, or relief from the toil of labor, or the shield of a rational self-respect.

The social worth of education is not so great indeed as it might be, but it is very large. It is true that the immediate product of certain branches of information is so visible and so tangible that the disposition of mankind would be to sacrifice method to knowledge, were it not for the urgency of competition among those who possess knowledge, and among whom the man who has at once method and knowledge is pretty sure to win the day. The influence of educated men on society, and the respect of society to educated men, would be more general, and more reciprocally beneficial, if more educated men applied their method to the

ordinary business of life. That they do not do so, is perhaps in great degree the fault of those institutions where the best education is given. I have not the slightest doubt that a person who has studied successfully, as he would do if he studied honestly, at the universities, would in trade, or any other business, speedily outrun competitors who had not the same advantages as himself. They do so ordinarily in those occupations which they undertake. They would do so in more, were not the expenses of the universities at serious impediments to their popularity. . . .

There is a popular, but I believe very shallow notion that the course of academical instruction is not useful. It is not worth while to revive a discussion settled long since, about the relative advantages of what are called practical sciences, and what is called mere mental culture. It is sufficient to say that the world would go on very poorly without both. Exclusive cultivation of mere physical knowledge would leave a very intelligible gap in those moral and intellectual forces which for good or evil, but especially for good, have such weight for the collective destinies of mankind. That mere mental culture should supersede the development of the knowledge of the material universe is unlikely; the danger is and has been on the other side, and this with but one exceptional period from the beginning of history. The advantage of an acquaintance with some branch of practical philosophy is so obvious and immediate that one is perpetually reminded of the risks which educational method runs in either being confounded with the knowledge of facts, or of being ignored altogether, or of the experts in the one branch of human science disdaining and disliking contact with the other, and men being divided as to the most fundamental securities of progress and civilization. It was with reason that Bacon asserted that his logic of facts would equalize all intellects. But great as the vantage ground is which is promised for such learning by those simple rules of inference which he first called attention to, the result has been that the mere acquaintance with such a method has caused it to cease from being an engine of education properly so called.—*Prof. J. E. T. Rogers, "Education in Oxford."*

AGASSIZ IN NEUFCHATEL.—HUMBOLDT AND
THE FRENCH ACADEMY.

[FIRST PART.]

IT is often of peculiar interest to observe great men in their undress. Ever since Macaulay remarked that for a delineation of James the First's character we must resort rather to the "Fortunes of Nigel" than to Hume or Lingard, historians have not disdained to search for their material in parlors and drawing-rooms. We hardly need this excuse when we lay before our readers a sparkling narrative from the pen of Carl Vogt,¹ the zoologist and ethnologist, referring to the names mentioned above. We hope that we shall offend neither the "manes" of the one, nor the great living soul of the other, by publishing incidents which, it is true, will detract something from the nimbus of the great dead, but cannot possibly lessen the feeling of reverence which the mere name of Agassiz awakens in the breast of all Americans. Let us listen then to Vogt's narrative.

I spent the five years, from 1840 to August, 1844, with Agassiz and Desor in Neufchatel, which at that time, being still a Prussian Principality, was closely connected with the Berlin Court by furnishing valets and governesses from the lower, and diplomats from the higher orders of its population. Our connection was dissolved by my translation to Paris, while Agassiz was about to migrate to America—his debts driving him over the water. Goethe's verses :

Wiedersacher, Weiber, Schulden,
Ach ! kein Ritter wird sie los !

might always have been strictly applied to him.

The city of Neufchatel was unquestionably one of the most boresome abodes in the world. It was governed by a *conseil municipal*, consisting of nine members, but being

¹ Published in the *Leipsc Gardenlaube* for January, 1870.

² We would remark here that Vogt's trustworthiness in matters of fact is beyond question, whatever may be our opinion on the soundness of his zoological and ethnological systems.

known by the queer title "Messieurs les quatre Ministres," because—as popular wit would have it—they had, although nine in number, only the intellect of four. The town contained no more than six thousand inhabitants, and yet it boasted of a "grand conseil," consisting of one hundred members, who every Monday would repair to their hall in short breeches, silk stockings, and cloaks with white trimmings. So secret did they keep their transactions that not even the beadle was allowed to enter the hall, it being the duty of the junior member to open the door at the beadle's knocking, and transact business with him outside. And so proud were they of their citizenship of Neufchatel, that, when Agassiz was almost simultaneously elected an honorary citizen of Neufchatel and a member of the French Institute, there was a very lively discussion among the people as to which of the two honors was the greater, till they agreed that it was clearly the citizenship of Neufchatel, seeing that so large a number of scholars had been already promoted to a membership of the Institute, but none as yet to the honorary citizenship of Neufchatel.

The variations and excitements that were occasionally brought on our monotonous life in Neufchatel consisted in divers trips to the neighborhood, with its grand scenery, and to the glaziers; in visits of strangers and scientific brethren; but especially in Agassiz' correspondence with Humboldt. Every time that Agassiz' funds were at low tide, and there was no prospect of any help whatever, even at the most distant horizon, a piteous cry for help was dispatched to Humboldt, who, good natured as he was, would then set to work to squeeze out of his royal friend,¹ under a more or less plausible pretext, some "solid dollars." Sometimes the *thalers* came as a "contribution for investigating fossil fish," sometimes as a "purse for a scientific expedition to the glaziers," sometimes it was an "extraordinary gratification" that relieved my friend's necessities. But even when nothing came, Humboldt would never fail to encourage him with promises of better times, and the perspective of "his monarch being in a giving mood." Hence

¹ Frederick William IV. of Prussia.

the excitement, which the arrival of such a long-expected missive would always create, may easily be imagined. All classes of "scribes and experts in the art of writing" were called in to decipher the mysterious lines; all kinds of magnifying glasses were applied to the hieroglyphs, which encroached from one corner of the letter into the other. Among these experts was Guyot, a geographer, who had studied under Carl Ritter; and Montvert, the librarian, who, with four anecdotes in his possession, which he used to deliver in a masterly manner, had been for forty years the indispensable "make-laugh" of all dinner parties. The work of deciphering was ultimately accomplished, though it often required several days' labor. On such occasions we never failed to excuse the excellent man with his travels on the Oronoco river, where, in default of a desk, he had contracted the habit of writing on his knees. It is true that sometimes in the course of such a labor a gentle curse may have escaped our lips, but still Humboldt's image was always before our minds as a being of the utmost kindness and benevolence, who was doing everything in his power for his friends and favorites (and Agassiz was among the foremost of them). With anxious punctuality, Agassiz answered every letter, and always contrived to combine in his answer good nature, geniality, and pointed wit. We did not, any of us, know Humboldt personally; still these traits of his character were not less imprinted in our souls than were those of his portrait. Now and then he would ask in his "answers" after the one or the other subject of Agassiz' specialties, and these inquiries were always worded in so precise and clear a manner as to show at once how perfectly he would master the reply in its whole range.

But the image that we had conceived of Humboldt was soon to be completed by new and altogether unexpected features. I came to Paris in August, 1844, having few chances and still less money, but with the firm purpose to stand on my own feet. I had some letters of introduction. The reports on the Transactions of the Academy of Sciences, which I had to make for Cotta's *Allgemeine Zeitung*, kept my head above water—at least, financially. My scientific works on the development of the Trout and the Toad

had likewise opened to me some avenues. I took my quarters in the old *hotel garni* of *Rue Copeau*, which at that time was the resort of all foreign scientists. Here Straus, of Dürkheim, his eyes always covered with a green screen, presided over the dinner-table. His celebrated treatise on the May-Bug had gained to him the nickname *May-bug*. He had a perfect mania for explaining to every new comer how the anatomy of insects ought to be managed. He asserted that the only way to perform the different operations properly was to sit in just such an arm chair *à la Louis Quinze* as he had in his study—the chair must have just such an indentation—the right hand ought to be supported in a peculiar way, and so the left, etc., etc. Each room in the hotel had a particular name, according to the scientists that had lodged in it, as Johannes Müller, Meckel, Rudolphi, Matteucci, Agassiz, Kohn.

The Academy of Sciences was then split into two parties. The head of the one was Alexander Brogniart, formerly Cuvier's associate for the geological part of his large work. The other party followed the lead of Arago. There were some few "neutrals," Blainville among their number, who were "incalculable." The Brogniartists were devoted to Louis Phillippe's government, while Arago's adherents belonged to the opposition. My connection with Brogniart had been formed by Milne-Edwards, who had always shown great interest in me. For Arago's acquaintance I was indebted to Martin, of Strasbourg, who had visited us on the Aar-glazier. Whenever Brogniart and Arago agreed about an election, the candidate might take it easy; but if the two leaders disagreed, the most ferocious battles would ensue. Arago, as a true Provençal could never keep or pronounce my name; but having once (though unsuccessfully) attempted to learn German from Schiller's Tell, he adopted the expedient of calling me "Gessler."¹

Since Humboldt was personally and intimately acquainted with both leaders, and with the older coryphees of the Academy, it will easily be understood how it came that he could exercise such an unbounded influence in the

¹ Gessler, as the reader will remember, was the Governor (*Vogt*) of Uri.

affairs of this institution. I myself heard him "*thouing*" Arago, which in France is customary only among classmates. With Brogniart he had been on the most intimate terms ever since Cuvier's times; with Biot, Gay Lussac, Chevreuil, he was connected by a friendship of long standing. Thus it came that the elections for new members of the Academy were not made in Paris, but in Berlin, as a friend of mine told me. The candidates first of all applied to Humboldt, who would himself come to Paris in their behalf, if they stood in particular favor with him. My readers are aware that a chair in the Academy is the much coveted aim of every Frenchman from the time he first enters on the field of science. In order to carry this prize his whole ambition is stirred, and all his efforts are strained to the utmost. Thus Humboldt's favor was sought and coveted by every one. I have been frequently asked by quite young people, who could not possibly obtain this honor in less than twenty years, whether I was acquainted with Humboldt. When I gave an answer in the negative, and added that I had not even made use of my friendship with Agassiz for this purpose, they would shake their heads, and give me distinctly to understand, that they had not too high an idea of my wits.

It happened just then that one of the chairs in the zoological section was vacant, and the race among the candidates was hot. The reader must know that a candidate for member of the Academy is the most pitiable creature in the world. Several months before election-day he hires a carriage for the whole day, and drives around the streets of Paris from early in the morning till after midnight in order to pay innumerable visits. He has one or two friends that are working for him; to these he reports daily and listens to their instructions and advice. Not only is he bound to call on all the members of the Academy, but also on their relatives and friends who might use their influence in his favor. He must rush from one parlor into the other, and play the amiable in all: here he must win over the lady of the house, there he must conciliate an old maiden with whom one or another of the aged members is wont to play a game of dominos. He must learn by heart a complete list of his different merits and claims, and repeat this lesson to all.

A list of all his literary works and articles he must have ready in print. If possible he reads at every session of the Academy a new paper, in order to attract attention; and for this purpose he has to bother not only the president and all the secretaries, but also the orators inscribe before him, to yield their places to him: in short he must be ubiquitous. At the close of such a campaign, the candidate is wan and haggard like a spectre, and when he finally obtains the chair, he sinks into it completely worn out and exhausted, and sometimes has enough of it for the rest of his life.

Valenciennes, the Zoologist, had for many years been living the still-life of a plant in the *jardin des plantes*. He was a good natured, fat, short-breathed gentleman, who vastly preferred a good and substantial dinner to any kind of work, and as to sauntering in the *jardin* in slippers and night gown, and feeding his favorite parrot—an intolerable, nasty creature—he liked that decidedly better than continuing his large work on fishes, of which he had to bring forth one volume a year, according to an engagement made with Cuvier. He had just intellect enough to distinguish one species from the other and to make a tolerable statement thereof, but in a French so horrible that he had become notorious for it all over the country. He had also compiled some zoological articles for Humboldt's large work—reason enough, why Humboldt (who has often been reproached with being partial for mediocrity) should decidedly patronize him.

One day when I was walking past his house, a gentleman in full dress ran against me. I recognized Valenciennes, panting like a furnace, his eyes standing out of their sockets. "What in the world is the matter with you?" cried I, "Ah, it is you," said he, "is there any carriage here?"—"Yes, at street corner."—"Adieu! I must be off." A few yards further on, I met my friend Lemercier, the assistant librarian of the *jardin des plantes*, who had taken a special fancy for me on account of my obliging him now and then by translating the titles of German books into French. "Do you know," said I, "what is going on with Valenciennes? He was rushing out of the garden, and almost ran me down."—"Was he in a dress coat?" asked Lemercier.—"He was."—"Then Savigny must be very sick indeed." On my remark-

ing that I had heard Savigny was dying, my friend exclaimed: "Then it is clear. Valenciennes is commencing his visits, even before his predecessor is dead. He would be apt to make a call on the dying man—to solicit his vote!"

Indeed, Savigny died a few days later. He had been the last surviving member of that renowned scientific expedition which accompanied Bonaparte into Egypt. All the closing years of his life he had been blind, sick, in the utmost poverty and destitution. And the Academy paid for his relief the enormous sum of about 1,000 francs a year, the very amount he was entitled to, if he could have been present at the meetings. That was the reward of one of the greatest searchers in science, one who had discovered and proved¹ the original identity of the masticating and sucking insects, and had shown the gradual metamorphosis of the one into the other.



SYSTEMATIC TECHNICAL EDUCATION.

PART IV.—TEACHERS.

OUR next business is with the teachers of our philosophy. Whom shall we have?• Where shall we seek them? What duties shall we give to each?

1. In the department of the philosophy of form it is quite plain that we must have one professor of the mathematical sciences; and if our university were an elementary school, a single professorship of mathematics might be deemed enough for all that could be taught or learned; but every student of higher mathematics knows that there are two great organs of mathematical investigation—geometrical analysis, and algebraical analysis,—and that their nature, laws, and methods, are essentially distinct. The calculus ignores as much as possible the specialities of the quantities with which it deals, and regards as nearly as possible their abstract relations.

(¹) This will be disputed by all Zoologists not belonging to the Darwinian school.—TRANSLATOR.

Geometrical calculus, on the other hand, finds all its elements in a very few species of quantity, comprehending at the most but three dimensions, and extending merely its own laws by analogy into the phenomena of other quantity. Subordinate then to our professorship of mathematics are at least two professors or teachers, the one of geometry, the other of calculus.

But even this subdivision of mathematics by two is not enough for our high university. Discrete quantities are of a familiar sort that mix themselves up with all the measurable questions of matter and common life, and therefore the philosophy of number covers one large kingdom of thought, embracing all the phenomena of matter, and all the relations of human life which we are able to render exact by establishing precise measures of space, time, bulk, direction, weight, force, or commercial value.

A professor, then, of the philosophy of number must find a chair in our university; and beside him we must seat another—the professor who treats quantities not as the vulgar units of common arithmetic, but who represents all quantities, all their relations in all possible permutations, combinations, and fluctuations, by means of abstract quantities, signs, and symbols; who undertakes to forethink and predict all the possible and impossible combinations of all conceivable quantities in all conceivable relations. That is quite enough for any human being, and entitles its master to fill a separate chair.

The geometrical professor also, though limiting the objects of his study to conceivable form and place, and their actual and conceivable changes, has a simpler task. The discrimination, the naming, the definition, the construction and the representation of all the possible forms of things under heaven, in the earth, and in human thought, is surely a large enough occupation for a single human mind, especially if, in addition to grasping all this himself, he has to find the means of making all these thoughts enter clearly in to the minds of others, and in that alone is duty enough for a single chair. But when we go further, and follow the geometer into all the laws of transformation of shape, size, and place, and pass with him through all the fluctuations

which every conceivable relation of space, place, direction, distance, and size can give to growing, dwining, or transforming shapes, then we have a field open to us of higher or transcendental geometry, sufficiently arduous, and entirely boundless, so that its value, usefulness, and grasp are entirely measured by the greatness of the mind of the professor whom we call upon to assume the chair of the higher geometry. Search we then the wide world round, here are four chairs capable of occupying the minds of a Newton, a Descartes, a Leibnitz, and a Gauss, if we can find them.

Four professorships are, therefore, the smallest number we can found in our university for the mathematical sciences. Two in the divisions of calculus, and two in the divisions of geometry. If we are more liberal, we should found also two superior professorships—one of the calculus, and one of geometry, not limiting either to one of its divisions, but grasping the mutual relations of both. And if we were still more wise and foreseeing, we should place one other highest philosopher at the head of this whole philosophy to develop the laws and expound the principles which group together all the elements of mathematical knowledge into one high philosophy—a philosophy of exact thinking, and of boundless discovery; to teach men, if possible, the thoughts of God, the great geometer.

2. In the department of the philosophy of physics, or the philosophy of the substance, stuff or matter which fills the visible forms with which we are surrounded, and gives to them force, power, quality, and energetic being, is probably the most immediately important and fundamental of earthly knowledge. The properties of the dead or living matter, of the still or moving matter with which man has to deal, and of which the world, ourselves, and all things in it are made, *that* may be thought the true matter knowledge, and indeed it is perhaps in a higher degree modern science than any other human knowledge. Quantity, number, form, and place were known to the ancients; the heavens, the earth, and the sea were studied by them, and some of the natures of vegetable and animal structures, and some of the laws of vegetable and animal life, were familiar to them. But the laws of the familiar phenomena

of matter and force were unknown to them, so that they could neither handle a tool, fire a shot, nor create a machine with a true knowledge of what that tool would do, where the fired shot would arrive, or what the created engine would achieve.

What we, therefore, call the physics of common life, and its philosophy the common laws of matter, were comparatively little known to the ancients; and the philosophy of substance, of force, of matter power, and matter nature, is of the essence of modern material philosophy. A high professorship of the philosophy of matter force and substance may well be founded in our university, and a chair of general physics will find ample occupation for pupils and teachers.

But modern matter discovery has overleapt the bounds of those sciences which treat all matter substance and force as one. That all matter obeys one law, and that all physical force is of one nature, is an old doctrine, and the alchemist who sought to transform earth or iron into gold only expressed his conviction of the physical unity of matter. Modern chemistry has dissolved ancient physics and alchemy, and may be said, by its analysis, to have created a new world—a new world of matter and a new world of thought; and so modern matter philosophy consists of two quite distinct and equal regions of subjects and of thought—the physical phenomena of matter, and the chemical phenomena of matter. For our university, therefore, are necessary a school of physics, and a school of chemics; one professor or more of physical science; one professor or more of chemical science. But even that physics which is concerned with matter in general must be broken down into branches of study. First must be examined and taught the properties which belong to all matter, and the phenomena which matter and its laws exhibit to us; and in order that we may govern matter, we must ourselves master the nature of all those forces which it can exert or will obey; and so the laws of force found for us a chair of dynamics, and the phenomena of matter provide for us the object of another chair, to master and teach all the phenomena which matter exhibits to us, and to follow certain laws through all the

transformations of matter, as the same substance becomes, first a solid, next a liquid, or is finally dissolved into an air impalpable but real. The laws of force are, then, the subject of one chair, and the phenomena of matter the subject of another, both comprehensive divisions of the physical departments of the philosophy of substance.

After the phenomena and forces growing out of matter or governing it, we must consider the properties and forces which belong to or grow out of one kind of matter, and with which some other kind of matter has nothing to do. It is the modern chemist who has discovered that there are kinds of matter which have nothing in common with properties which essentially distinguish one kind of matter, and render it impossible to apply one to the purpose of the other. A hammer, as a mechanical tool, would be equally good for most uses, whether made of brass, iron, steel, copper, or any other sort of matter; but a chemical tool made of any one of these substances might be totally unfit for any other purpose to which it might be applied.

It is these differences in the natures of kinds of matter, which form the special subject of that chemical science which show us that in our earth alone are forty or fifty kinds of matter essentially different, and that out of these forty or fifty are made hundreds of other kinds of matter, simply by combining these elements with each other in certain definite proportions.

From this short statement it will easily be seen that chemistry is one of those sciences to the teaching of which it is not easy to set definite bounds. To say that one teacher or ten teachers of chemistry would be sufficient for our university is extremely difficult; it is certain that ten teachers of chemistry would find ample work in teaching and guiding one hundred energetic students, determined to master in three years the chemistry of our material world. But the least number we could assign would be professorships for the two great divisions of chemical analysis and chemical synthesis; or we might assign two—one to organic, and one to inorganic chemistry. For the present we will content ourselves with three—one for inorganic chemistry, one for quantitative analysis, and one for organic chemistry.

leaving them to add as many assistants as the convenient subdivisions of their subject require. The science of general physics is therefore a subject for one chair, in which possibly might be also introduced chemical physics, containing principles and matters common to both. Next, two professorships; one of the department of mechanics, or natural philosophy, as it is sometimes called, and another for general or inorganic chemistry. And next for the divisions of properties of matter and laws of force, professors of special physics and dynamics, and in chemistry professors of analytical chemistry and organic chemistry; in all, seven chairs.

MISUSE OF THE WORD "AND."

"**A**ND" is a conjunction, whose office is explained in the etymology of the word "conjunction," *i. e.*, to join together. Says Webster, "it signifies that a word or part of a sentence is to be added to what preceeds."

The period indicates a completion, and is used to separate that which preceeds from what follows. It is properly called a full stop.

Then, it is evidently improper, inconsistent, and contradictory to commence a sentence after a period with the conjunction *and*. The one tells us to divide, the other tells us to unite, and both at the same time.

Yet many of our best scholars and most elegant writers frequently violate these most simple and obvious rules of grammar and punctuation. Not long ago, the leading article in the most learned and critical Quarterly in our country was completely spoiled—as to the pleasure of reading it—by this constantly recurring blemish. Probably every two periods out of three are followed by "*and*." That delightful book recently published, Rev. Dr. March's "*Night Scenes of the Bible*," is greatly marred by this same inconsistency, and it is the only fault in the pure and classic English of that scholarly writer.

Presidents of colleges, professors, and editors are guilty of this breach of good scholarship. It is probably owing to carelessness, which is growing into a bad habit. This is inexcusable in any man with only a common school education in English grammar, and much more so in literary men and finished scholars.

The object of this communication is to call the attention of teachers to this growing absurdity, that it may be corrected in the education of the rising generation which is now in their hands.

M. BARRETT.

SCIENCE FOR CHILDREN.

THE schoolmasters of the present day may be divided into two categories: those who *teach*, and those who *hear lessons*; the latter class, unfortunately for the next generation, being by far the more numerous. The mischief done to the community generally by the short-comings of inefficient teachers is too well known to every one who has pierced below the surface of the great question of middle-class education. The difficulties, however, that best a science teacher in his endeavors to force scientific truths into the unwilling and unprepared minds of boys, who have been subjected to the sway of these same lesson-hearers, can only be realized by those who have gone through the task. The case of a senior science class, which has been under my charge for some months past, will illustrate my meaning most fully. It consists of about a dozen boys, whose ages range between fourteen and seventeen years, and they receive twice a week an hour's instruction on chemistry and physics. The class may be divided into two distinct portions by a perfectly sharp line. Four of the boys have had the advantage of six or seven years' training under the principal of the school, who is not only a ripe scholar, but also an efficient teacher—a very rare collocation in these days. The rest have simply learnt lessons all their lives. The four boys who have been *taught* are as mentally

distinct from the others, as if they were different species of the same genus. The first four are bright, attentive, wide-awake—I know of no other term to express exactly what I mean—logical, and clear-headed; they can fairly follow a chain of scientific reasoning, and reproduce it afterwards link by link; they have a certain power of induction and deduction, although of course, being new to science, this power is necessarily only just awakened; they can connect and correlate facts and ideas, they can enumerate a series of phenomena in logical sequence; in a word, although their industry and application are far from colossal, the task of teaching them the truths of natural science is a comparatively easy one. The other boys, as I have said before, almost form a distinct mental species. They cannot understand the possibility of learning anything without the aid of a book, and the idea of finding out anything for themselves has never entered their heads. Still they are far from stupid boys, being all possessed of good average brains; yet their faculties have not merely been allowed to remain undeveloped, but they have been utterly entangled, stunted, and stultified by what Dr. Frankland would call their “previous school contamination.” These boys, it must be understood, are the sons of parents belonging to the upper stratum of the middle class, and have mostly been to schools conducted by university men with honorable initials appended to their names—men, in fact, who are scholars but emphatically no teachers. Their great fault is a total want of mental method, without which the greatest brain is as nought. They are at home in Virgil and Horace, some of them are fair Greek scholars; they have “been through” Euclid, and can work moderately difficult algebraical problems in a certain mechanical fashion; they are well acquainted with the leading facts of English history, and know the exact position and population of Adrianople; but as far as real mental power goes, any poor boy, who has been in a National school for three years, would beat them hollow.

These facts surely point out the absolute necessity of beginning scientific training at a very early age; and I fancy this necessity has not been sufficiently dwelt upon in the numberless essays, letters, lectures, and evidence on the

subject of scientific education with which we have been deluged during the past decade. There seems to have been a notion abroad, that scientific teaching should not be begun before the age of twelve or fourteen; but why, I would ask, should boys' minds be allowed to remain fallow during all these years? The minds of boys of seven and eight should surely be as carefully developed as those of their seniors, and there is certainly no means of pure mental culture so successful as scientific teaching. A boy of this age should not be taught science so much for the sake of acquiring a certain number of facts, as of developing his powers of observation and reasoning, and giving a proper tone to his mental faculties. A boy of eight or nine takes a morning canter of three or four miles on his pony, not for the purpose of getting over some seven thousand yards of ground, but to strengthen his muscles and improve his carriage: his science lesson should be an intellectual canter, taken with the view to strengthening and improving his mental muscles and carriage.

It may be urged that children of eight or nine are too young for systematic science teaching, but facts prove the contrary. An ordinarily intelligent boy or girl of this age is perfectly capable of understanding the broad differences between the animal, vegetable, and mineral kingdoms; that there are more gases than one in the world; that some of them are colorless, while others are brown or green; that some burn and others do not; that some plants grow from the inside, while others grow from the outside; that some animals have jointed backbones, that others have their bones outside their bodies, while others have none at all. Facts such as these are perfectly comprehensible to children even younger than those I have named. During the first two years of a child's school life, after he has learned to read and write, he should be carried through the whole range of physical science in a systematic manner. The fundamental truths of chemistry and physics should be first taught him: all theoretical considerations being left aside. As few definitions as possible should be given, the whole task of the teacher at the commencement being to cultivate the child's powers of observation to the utmost. Gradually the powers

of induction and deduction may be developed, facts and phenomena should be compared, and conclusions drawn from them. Order in thought and description should be specially insisted upon, and occasional retracings of the ground already gone over should take place. The objects of this preliminary science-teaching should be two-fold: first and foremost, to train the mind and form the judgment; and secondly, to give the child a general idea of the object and scope of the natural sciences. At the age mentioned, the faculties are all fresh, and in full process of development; and such is the desire to exercise them in intelligent children, that their thoughts often run wild. There is nothing a child likes so much as investigation, or "finding out all about things," as he himself would phrase it. The boy in the nursery rhyme who cut the bellows open to see where the wind came from, is a type of his class. Unfortunately at the present time, scientific teachers for children are extremely rare, but let the want once arise, and the demand will soon be met. We have plenty of scientific teachers and lecturers for boys and men, but the child has hitherto been left out of consideration. Teachers, in the true sense of the word, are every day on the increase, and even the old-fashioned schoolmasters are beginning to see very plainly that they must alter their system of instruction, and yield to the pressure of the times. But it is not only upon these that I would urge the necessity of beginning science-teaching at the earliest possible period, but also upon those who have already adopted science as part of the ordinary school curriculum for the older boys.—*Chas. W. Quin, in "Nature."*

A GOOD EXAMPLE.

A HESSIAN Schoolmaster has set an example worthy of imitation. It was the general complaint in his village that the boys were continually guilty of cruelty to animals, of taking away birds' eggs, and destroying their nests. The teacher, grieved at such conduct among his own scholars, determined to form among them a Society for the Protection of Animals and the Preservation of Plants. The

children were delighted when their instructor communicated to them his idea, and with the greatest willingness took upon themselves the duties imposed by the rules of the society. During the past year the children caught many thousands of injurious insects, destroyed innumerable caterpillar nests, and collected and killed May chafers by the bushel. They are taught, however, to protect the useful animals, and to preserve the birds and their nests most zealously. Last winter the children took upon themselves the duty of strewing food in frosty weather to their little winged friends. The communal authorities of the place planted a number of young fruit trees last summer, and these are now placed under the special care and oversight of the school youth. The teacher has apportioned to each boy a certain number of trees, and the children are said to have become very much attached to the charge placed upon them. No rewards are offered to the children; they feel perfectly satisfied in being able to be of service, and to work for the general good.

EDUCATIONAL INTELLIGENCE.

NEW YORK.—The report of our City Superintendent for the year ending December 31st, 1869, gives as the number of pupils taught 237,325, and the average attendance 102,970. The enrolment (*a*) and the average attendance (*b*) were distributed among the different grades of schools as follows: Boys' grammar schools, *a* 31,745, *b* 16,803; girls' grammar schools, *a* 28,476, *b* 13,657; primary departments, *a* 90,722, *b* 38,441; primary schools, *a* 45,153, *b* 17,261; colored schools, *a* 1,990, *b* 795; evening schools, *a* 19,537, *b* 8,569; corporate schools, *a* 18,752, *b* 6,900; normal schools, *a* 950, *b* 544. Further statistics of attendance is given only for the primary schools and departments and the evening schools. Of the former, there were under the control of the Board of Education 110, including six primary schools for colored children. In these schools there were in December

last 1,068 classes, numbering in all 65,450 pupils, and giving employment to 1,248 teachers. The sizes of the classes ranged from 25 to 200 pupils. The largest number of pupils registered in a single school was 1667, and the largest number of teachers employed in any school was 27. The pupils are divided into six grades. The lowest (6th) grade numbered 16,340 pupils, the highest 7,625. In some of the schools more than one-third of the pupils were in the lowest grade. "The great numbers in classes of the lowest grade is partly owing to the fact that in some localities a large portion of the children leave school before they are able to enter the higher grades of the primary course; but among other prominent causes, may be mentioned the inefficient character of the instruction given, and the very large number of pupils assigned to a single teacher in this grade. These last evils appear to be chronic, and cannot be removed without more school accommodations for the classes of the lower grades, and some change in the practice of placing the teachers of the least experience to perform the most difficult work in the school."—(Pages 74-75.) The foregoing would appear to show that the school sittings provided by the City are not properly distributed among the several classes of schools, or else that there was a great mistake in the report of a special committee last September, which claimed that the public schools of the City had "an excess of seats over the average attendance of about 40,000." The aggregate expenditure for school purposes was nearly three million dollars.

OHIO.—In advance of the publication of the annual report of the State Commissioner, the *Ohio Educational Monthly* gives that officer's summary of statistics for 1869, with the corresponding figures for 1868. These show that, with 1,028,877 children and youth between 5 and 21 years of age, the State gave more or less instruction to 740,382,—that number being enrolled in the public schools as follows: In common schools, 711,652; in high schools, 12,146; in German schools, 5,467; in colored schools, 4,748. The enrollment was 72 per cent. of the school population; the average daily attendance was 42 per cent. of the same, for a period

of twenty-six weeks in the sub-district schools, and about thirty-three weeks and a half in the graded schools. The whole number of schools was 11,714; common, 10,962; high, 198; German, 55; colored, 204. These schools were held in 11,714 school-houses, which, with their sites, were valued at nearly twelve and a half million dollars. The number of different teachers employed was 21,626, the number necessary to supply the schools being 14,182. Of the first 9,721 were men, and 12,455 were women. The average monthly wages of male teachers in sub-district schools was \$38 08; the female teachers received \$24 29. The amount paid to teachers for the year was \$3,671,905, the grand total of school expenditures being \$6,630,793. The receipts from local taxation show a gain of \$708,625, while the miscellaneous receipts declined so as to reduce the aggregate gain to \$658,273. The increase in the local tax has been over one hundred per cent. since 1866. The expenditures have been nearly doubled in the same time, the greater part of the increase being in the amount expended in the erection of school-houses. In this item the gain has been nearly three hundred per cent. But a small part of the increase in expenditure falls to the teachers, their gain being less than thirty per cent. of their wages for 1866. The statistics of teachers' wages for the past year are somewhat contradictory. The total of teachers' wages shows an increase of \$284,004, while the average monthly wages were less than for the previous year. This discrepancy puzzles the Editor of the *Monthly*, "as it is not due to an increase in the time schools were in session, nor to the small increase in teachers." Mr. White also calls attention to a blunder frequently made in estimating the number of children in any State that are growing up unschooled. He says: "A comparison of the enumeration and enrollment shows that about 72 per cent. of the youth of school age attended the public schools some portion of the school year, leaving 28 per cent., or 288,495 youth, not enrolled. But we must not infer that these non-enrolled youth in 1869 are growing up in ignorance, without schooling—a very common blunder, and one which has been made in the school reports of several States. At the session of the Pennsylvania Teachers' Association in August last, it

was stated in a report on Absenteeism and Compulsory Education, that there are 135,000 youth in Ohio whose education is 'totally neglected.' We took occasion to correct the statement as unjust to our State, but were met with the remark that it was taken from the official school reports of Ohio—the number of youth of school age not enrolled in public schools being say 220,000, of which not more than 85,000 attend Catholic and other private schools, leaving 135,000 not in school. It was not difficult to show that the fact that there were 135,000 youth of school age out of school in a given year, is no evidence that their education is totally neglected. The school-going period in Ohio is largely between six and seventeen years of age, while the enumeration includes all unmarried youth between five and twenty-one. If every child in Ohio should attend school regularly ten months a year from the age of six to seventeen, there would still be more than 200,000 youth of school age not enrolled in school in any one year. Take, for illustration, a family of eight children, one being between five and six years of age, five between six and seventeen, and two between seventeen and twenty-one. The returns may show that but five of these children are attending school, but does it follow that the other three are growing up in ignorance? The eldest two may be graduates of the high school, and each of the other children may in due time receive a like good education. The truth is, that the difference between the enumeration and school enrollment proves nothing respecting the number of youth growing up unschooled."

MICHIGAN.—The Regents of the University of Michigan recently resolved to recognize the right of every resident of Michigan to the enjoyment of the privileges afforded by the University, no rule existing in any of the University statutes for excluding from the University any person who possesses the requisite literary and moral qualifications. This opening of the doors to lady students will not necessitate any material change in the conduct of the institution. The minimum age of admission has been changed from 14 to 16. The University now numbers something over a thousand students, about four hundred being in the department of Science, Literature and the Arts.

WISCONSIN.—According to the State Superintendent's report for 1869, Wisconsin is divided into 4,735 school districts, 4,651 of which made returns of school statistics. The number of children and youth between four and twenty-one years of age thus reported was 398,747, an increase for the year of 12,117. The number of children of school age in districts maintaining school five months or more was 394,837, over 20,000 more than were reported last year. The number of different pupils enrolled in the schools during the year was 264,033, of whom 698 were under and 1,540 were over school age. The average length of time schools were maintained was 151 days, about 10 days more than the term for 1868. The total number of days' attendance of different pupils during the year was 19,139,941, over half a million more than last year. Besides this attendance at the public schools, there were nearly 20,000 pupils reported as attending private schools, academies, colleges, etc., for a longer or shorter period. The unreported pupils, the Superintendent thinks, would swell the number of school-goers to about 290,000, leaving over a hundred thousand persons of school age who received no school instruction during the year. The number of school houses provided by the State was 4,742, with accommodation for 274,022 pupils, or ten thousand more than were enrolled. The number of teachers required to supply the schools was 5,517; the number of different teachers employed during some portion of the year was 8,775. The wages of these teachers amounted to \$1,193,985, averaging \$43 63 a month to male teachers, and \$28 34 to female teachers. The total expenditure for school purposes was \$1,987,436, or \$7 52 for each pupil registered. The Superintendent discusses the text-book question, favoring State uniformity.

KANSAS.—Out of 1,707 school districts in this State, 1,621 furnished statistics for the State Superintendent's report for the year 1869. The legal school population includes all between the ages of five and twenty-one, and numbers 92,517, an increase for the year of 11,367. Of these 58,681 were enrolled last year in the public schools, an increase of 13,541; while 2,784 others were enrolled in other institu-

tions of learning. The average daily attendance at public schools was 31,124, an increase of 3,886. This small increase in average attendance does not speak well for the management of the schools. It should have been four times as great. The schools were in session an average period of five months. The number of teachers employed was 2,014—males, 896; females, 1,118; a total increase of 413. The average wages of teachers were—to men, \$37 07 a month; to women, \$28 98. These figures show a decrease of \$2 49 in the wages of male teachers, and 12 cents in the wages of female teachers. Whether this decrease in teachers' salaries had any influence in determining the low rate of increase in average attendance, there is no means of telling. The total amount paid for teachers' wages was \$292,711, an increase of \$88,844. The amount raised by direct tax for the support of public schools was \$428,984, the aggregate resources of the schools having been \$565,311. The number of school-houses in the State was 1,213—log, 348; frame, 606; brick, 35; stone, 224. The increase for the year was 260. The value of the school-houses was \$1,031,892; of apparatus, \$17,118.

TURKEY.—The Porte has recently issued a law on public instruction containing the following provisions: The public schools of the empire are to be of five classes—primary, superior primary, and preparatory schools, lyceums, and special schools. Each quarter in a city and village must maintain a primary school for Mahommedans, another for non-Mussulmans. Children are to receive instruction in the religious book of their persuasion, attendance being compulsory during four years, from the age of six to ten for girls, or of eleven for boys, save in certain specified instances. A superior primary school, or two if necessitated by religious differences, is to be instituted, at the charge of the vilayet, in every town of five hundred houses. The course in these will likewise extend over four years, and will include Turkish, Persian, and Arabic grammar, arithmetic, book-keeping, geography, history, geometry, and one local language. Boys and girls are not to receive instruction together. The highest class of educational establishments

includes a normal school; the upper schools of arts and sciences; and the University of Constantinople. The university is intended to contain three faculties—for letters, law, and physical science. For the present, however, its curriculum embraces merely Turkish literature, arithmetic, elementary geometry, and the rudiments of law. There will be instituted at the capital a Council of Education, and an Academic Council in each chief city of a vilayet.

CURRENT PUBLICATIONS.

TAKING "The American Women's Home" as a basis, the authors of that work have prepared another for use as a text-book¹ in Young Ladies' Schools. It is intended to give to girls such instruction as may fit them for the "duties, cares and pleasures of the family"—the family being, in the authors' opinion, the place where, whatever may be the political development of the future, Woman will find her most engrossing occupation. The authors believe that the chief cause of the disabilities and sufferings of women is the fact that the honor and duties of the family state are not duly appreciated, that women are not trained for these duties as men are trained for their trades and professions, and that as a consequence, family labor is poorly done, poorly paid, and regarded as menial and disgraceful; and hope by their book to "elevate both the honor and the remuneration of all the employments that sustain the many difficult and sacred duties of the family state, and thus to render each department of women's true profession as much desired and respected as are the most honored professions of men." The book contains some thirty chapters ranging over the whole field of domestic economy, with a supplementary chapter containing an address of the senior author to the female teachers of the country, in which is sketched a plan for an industrial school of high grade for women.

¹ PRINCIPLES OF DOMESTIC SCIENCE. By Catherine E. Beecher and Harriet Beecher Stowe. New York: J. B. Ford & Co.

MESSRS. SHELDON & CO., have added to their list of school books a useful series on English and American Literature, comprising Shaw's well known Manual,¹ with Dr. Smith's notes and illustrations, to which has been added a sketch of American Literature, by Henry T. Tuckerman; Choice Specimens² of English Literature, selected by Drs. Shaw and Smith, and somewhat altered and amended by Dr. Martin, of the University of this city; and a smaller History of English and American Literature,³ an abridgement of the first named. The second is soon to be supplimented by a volume of Specimens of American Literature, selected and edited by Dr. Martin. The high value of this series, as an introduction to the literature of our mother tongue, should secure for it a wide use in our schools. Indeed we should confidently bespeak popularity for it, if modern literature were awarded its due proportion of time in our school studies, and if the publishers' desire to crowd a large amount of matter into small space had not prompted them to use smaller type than is appropriate for school books. The Manual is particularly hard to read from this cause, and the evil is not a little aggravated by imperfect printing. The volume of specimens being better printed on whiter paper is typographically more commendable.

In his "Health by Good Living,"⁴ Dr. Hall essays to show how high health can be maintained and common diseases cured by "good living," which according to his definition means eating with a relish the best food prepared in the best manner, and to show how the all-important relish can be secured. The implied thesis, that proper diet will ensure good health, will be pronounced extravagant by most people, though few readers will refuse to admit that there is much profitable advice mixed with his arguments to maintain it. The book seems calculated to do much good to a large class who would be frightened at a more pretentious work.

¹ SHAW'S COMPLETE MANUAL OF ENGLISH LITERATURE, 12mo., cl., pp. 540. \$2 00.

² CHOICE SPECIMENS OF ENGLISH LITERATURE, 12mo., cl., pp. 477. \$2 00.

³ SHAW'S SMALLER HISTORY OF ENGLISH AND AMERICAN LITERATURE, 16mo., cl., pp. 268.—\$1 25.

⁴ HEALTH BY GOOD LIVING. By W. W. Hall, M.D. New York: Hurd & Houghton. 12mo. cloth.

PROF. EVANS'S DEFENSE.

THE readers of the MONTHLY have seen in the March number Prof. Evans's reply to Prof. Fischer's review of his *Abriss der deutschen Literaturgeschichte*. Besides this reply, there have been published by Prof. Evans, or in his interest, a number of articles in certain other periodicals, in which not only is the charge of plagiarism flatly denied, but a counter-charge of malicious accusation, even of forging the documents from which quotation was made, is raised against Prof. Fischer. Since this charge of forgery has been made repeatedly, and since in some cases it has been asserted that Prof. Evans never heard the lectures which Prof. Fischer has charged him with unduly using, we are compelled to lay before the public the whole history of the matter.

Prof. Evans's book was sent by his publishers to the editor of this Magazine, and by him was referred to Prof. Fischer for review. An examination of the work created in Prof. Fischer's mind a lively suspicion that it was in the main a series of German University lectures, some evidence pointing to Göttingen as its place of origin. To settle this point, inquiry was made of the well-known publishing house of *Vandenhoeck and Ruprecht*, one of the largest and oldest of German publishing firms. The present representative of the firm, Mr. C. Ruprecht, is a highly-educated scholar, an eminent bibliographer, distinguished alike for his personal integrity and his social position. In reply to the inquiry whether Prof. Evans's book (a copy of which was transmitted for examination) was not a transcript of Göttingen lectures, Mr. Ruprecht, under date of October 19, 1869, replied to Prof. Fischer as follows, the letter being literally translated into English :

"Immediately after reading Mr. Evans's book, I was sure that the author had made a great use of the lectures of our literary historian, Prof. W. Müller, whose lectures I myself have heard in former years. Müller, to whom I brought the book, confirmed my opinion in every respect ; and said, after a minute examination, that Mr. Evans had greatly used his lectures (*seine Vorlesungen stark benutzt habe*), although in consequence of erroneous understanding (*in Folge unrichtiger Auffassung*) had often produced the direct contrary of what he himself had said, for instance in the passages concerning Göthe. The enclosed volume (that of Mr. Wiemann) offers material enough for a charge of plagiarism against Mr. Evans, although it has not been written very completely (*ist leider nicht sehr vollständig nachgeschrieben*). It was important to obtain the lecture-notes (*ein Collegienheft*) of that half-year in which Mr. Evans had heard Prof. Müller's lecture. For this purpose, I wrote to the birth-places of those hearers who, according to Prof. Müller's statement, had heard, together with Evans, his lectures. There were four of them, besides Mr.

Evans, but not a single one could be immediately found, and only after some time one of them wrote me that he had not taken any notes at all. Another stated that all his lecture-notes, without exception, had been lost. A third said that he had taken his notes very irregularly, and could not produce them; and, finally, I received the enclosed (Mr. Wiemann's) notes, which I have laid before Prof. Müller, and caused to be acknowledged and certified by him."

The title of Mr. Wiemann's volume is as follows:

Geschichte der Deutschen National Literatur Vorgetragen, Von Prof. W. MÜLLER. Michaelis, 1859, bis Ostern, 1860, G.A. (!) A. Wiemann, Stud. Phil. and Theol.

(Translation of the certificate on the title page.)

"These notes are written according to my lectures on the 'History of German National Literature,' delivered in the winter 1859-60.

(Signed)

"WILHELM MÜLLER, Dr.,

"Professor.

"Göttingen, August 16, 1869."

"The authenticity of the signature of Prof. Dr. Wilhelm Müller certify hereby

(Signed)

"VANDENHOECK AND RUPRECHT,

"Academic Publishers.

"Göttingen, August 18, 1869."

The foregoing documents have been submitted to the well-known publisher and importer of books, Mr. L. W. Schmidt, 24 Barclay St., N. Y., who is familiar with Mr. Ruprecht's writing from long correspondence with him. Mr. Schmidt pronounces both the letter and the certificate quoted above to be in Mr. Ruprecht's writing. He has also compared the passages from Mr. Wiemann's notes, printed in the MONTHLY for January, with the notes themselves, and testifies that they agree word by word. The volume of Mr. Wiemann and the letters and certificates may be seen at this office by any one desirous of inspecting them. So much for the charge of fabricating proofs.

Prof. Evans further alleges in his defense, that the passages—the authenticity of which he has denied—are after all no proof of plagiarism. To sustain this position, he quotes what he calls parallel passages from other authors, whose integrity is not to be questioned; and claims that if he is guilty of plagiarism, all the distinguished authors he quotes from are obnoxious to the same charge. But he overlooks the fact that Prof. Fischer gives not detached sentences, but a connected passage of more than a page, commencing with the

¹ Georgia Augusta—that is, Göttingen University.

very beginning of the book. Plagiarism does not consist in an occasional using of thoughts that other authors have advanced. Who does this lacks not honesty so much as originality. But a writer, who through a whole subject follows sentence by sentence the lead, and uses in large measure the very words, of another, betrays not merely poverty of thought, but poverty of moral sense as well. And this is demonstrably Prof. Evans's case, as may be seen from the following review of the controversy in *The Nation* of February 24th.

"No one could have been more gratified than ourselves if the recent controversy between Prof. E. P. Evans and Prof. Gustavus Fischer had resulted favorable to the former. We had a direct interest in the matter, owing to the praise bestowed by the *Nation* on the 'Abriss der Deutschen Literaturgeschichte,' which has been under dissection; and we should have been glad if the literary judgment which we adopted, from our faith in Prof. Evans's character, as well as in his attainments, had been, if not confirmed, at least not seriously impaired. However, both parties have now been heard, and more than once, and it is possible to decide between them without injustice. The papers which have already attempted to do so have shown either a theological bias, on the one hand, or a 'Know Nothing' bias on the other. It is needless to say that we sympathize with neither, but purpose making an unprejudiced presentation of the facts in the case. As we write, the whole of what has been published on both sides, by the author and his critic, is to be found in the *American Educational Monthly* for January, February, and March, and the *Chronicle* (of the University of Michigan) for January 29 and February 12. Prof. Fischer's charges are of three kinds: (*a*) that the *Abriss* is not what it (negatively) purports to be, original; (*b*) that it is mainly made up of notes taken at a series of private lectures by Prof. Wm. Müller, of the University of Göttingen, in 1859-60; (*c*) that it is so full of errors, misapprehensions, omissions, and confusion, as to be worse than worthless to students or scholars. To this Prof. Evans replies in general, that (*a, b*) he had prepared a preface which was not printed with the first edition (for use in his own classes), acknowledging his indebtedness to a great many German professors, Müller included, whose lectures he attended; that he did not use his notes of any of these lectures in preparing his *Abriss*, but that they were inextricably mingled in his mind with ideas derived from authors, to be named in the preface, whose works he had read, making notes which he *did* use; that he heard a portion only of Prof. Müller's lectures, and in 1858-59 (not 1859-60); that his notes on these covered scarcely three sheets of paper, and to them he owed only "a few hints as to the general division of the subject into periods;" finally (*c*), that "competent critics, both in America and Europe, have pronounced a very different judgment" on the *Abriss* from that pronounced by Prof.

Fischer. The latter's proofs of plagiarism consist in, (1) the style of the *Abriss*, which he recognized as unmistakably that of the German professor; (2) correspondence (in detail, for about sixty pages in scheme of outline, throughout) with notes made at the same lectures by a Mr. Wiemann, procured by Prof. Fischer, and endorsed as genuine by Prof. Müller; (3) discrepancies due to misunderstanding the lecturer; (4) disproportion in treatment of periods and authors, incongruous and incoherent judgment and descriptions, and errors of a sort incompatible with originality or research. On the second point, Prof. Fischer's exact words are: "In the arrangement of the periods and their subdivisions, and in the scheme of the whole; there is a complete identity" between the two sets of notes. Prof. Evans replies: (1) Naturally he has caught the professor's style; (2) he doubts the existence of Mr. Wiemann. To (3) and (4) he replies not in general terms—for they were not formulated as we have put them—but according to the several instances alleged by his critic. Prof. Fischer begins his citations of parallelism at page 9 of the *Abriss*, and places eleven (with one gap not indicated) consecutive paragraphs, making nearly the whole of page 10, against Wiemann's notes as they run; in each instance *the German text only*. Prof. Evans appears, from this comparison, to have made one omission, two insertions, a few insignificant and some very significant alterations, but on the whole to have followed Müller, *pari passu*, in thought and *order of thought*. To clear himself of this imputation, he asserts that he has merely used what are now axioms in the history of literature, and explains on this ground the likeness of seven of the ten agreeing paragraphs, citing both his own and Wiemann's, and then from well-known authorities passages embodying the same ideas; but, "out of tender regard for the infirmities of the general reader," rendering all the quotations *into English*. To be sure, he gives occasionally the German word in parenthesis, but this only when it makes for his side, and sometimes with the effect of diverting the reader from the point of resemblance. And he neglects entirely to account for the order of ideas in each paragraph (which does not always reappear in his confirmatory citations), and for the order of the paragraphs themselves within the compass of a single page. That Prof. Fischer might have produced similar parallelisms in the subsequent pages as far as p. 60, when Wiemann's notes ceased to be full, is rendered probable (besides his word for it) by extracts from pp. 11-40, showing important misconceptions of, as well as continued agreements with, Müller's remarks as reported by Wiemann. When they contain an error of fact, Prof. Evans generally replies with an emendation; when they involve nice shades of meaning—the *nuances* which are the test of proficiency in a language not one's own—he is silent. But emendations and silence alike fail to account for such a composition as the paragraph which analyzes "Faust," or that other on "Thiersagen," in Prof. Fischer's

second article, which we have not space to allude to further. We have verified all his citations from Prof. Evans, and have even detected in them an error favorable to the latter, and we conclude the *Abriss* to be wanting in originality, and to be more the echo of Prof. Müller than of any authority within our knowledge, though probably made up from other sources—from one of which, Weber's "History of German Literature," Prof. Evans is taxed with having "almost literally copied" his review of Latin poems of the ancient period. While disposed to allow him the full benefit of his intended preface, as if it had been printed, we cannot think that it gives a fair account of the nature of his book."

The futility and disingenuousness of Prof. Evans's replies need not be longer dwelt upon. Still if he or his friends are not satisfied with the evidence of his guilt already given, Prof. Fischer will continue the comparison of the *Abriss* with the notes of Mr. Wiemann, beginning where he left off in January. He will then go on to trace to their sources the portions of this patchwork volume that were *not* taken from Prof. Müller's lectures.

But one more point in Prof. Evans's replies requires notice at our hands, and that is his slanderous mention of the MONTHLY, in his communication to the *Detroit Post*, as "a journal that affords Mr. F. every facility for continuing his attacks, but has no place for a reply *except at advertising rates.*"

For this insult, Prof. Evans, under date of February 17th, makes the following clumsy apology :

MR. EDITOR :—I have just received the March No. of your MONTHLY, containing my communication in reply to Mr. Fischer, and I am much obliged to you for its insertion. As my article did not appear in the February No. of your MONTHLY, and as no allusion was made to it, I was led to believe that you did not intend to publish it at all. This belief was strengthened by a statement coming from a gentleman residing in New York, that you would probably not print it "Except at advertising rates." A few days ago, I received a letter from Mr. Holt (of the firm of Leypoldt & Holt), taking upon himself the blame for this misunderstanding, because he neglected to inform me that you intended to publish my communication in the March number of your Magazine.

We need only remark that the reckless disregard of truth, which led Prof. Evans to make a positive statement of so serious a character, on the flimsy foundation of some unnamed gentleman's insinuation of *probability*, may help to account for his free use of other men's property, without troubling himself to make any sort of acknowledgment.